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AUTHOR	Treacy, John; And Others
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ABSTRACT

This report outlines some of the institutional factors likely to affect the demand for teachers in the Ohio labor market, including a brief description of the Ferguson Act which prohibits strikes by public service employees. The author also deals with teacher supply, including a brief assessment of the two major organizations advocating collective bargaining for teachers in the State -- the American Federation of Teachers and the Ohio Education Association. A linear regression model "explaining" the variance in average public school teacher salaries is presented. The final section contains empirical results and conclusions. (Author/JF)

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SALARIES, STRIKES, SHUTDOWNS, SPLIT SHIFTS AND COLLECTIVE BARGAINING IN OHIO PUBLIC SCHOOLS

By

John Treacy
Russell Harris
Charles Blake*

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*Respectively, Associate Professor of Economics, Wright State University; Ford Foundation Fellow, Maxwell School, Syracuse University; Associate Professor of Economics, Wright State University.
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I. INTRODUCTION

This study was undertaken to provide answers to a set of first order questions and to contribute information that might be integrated into future studies directed at answering a set of second order questions. The first order questions are: Has collective bargaining in Ohio been successful in getting teachers higher wages?; Does the particular type of organization bargaining for the teachers make any difference on the gains achieved?; Have the teachers been willing to trade wage gains for more desirable working conditions in the form of reduced class size? and; Have unions been more successful in urban rather than rural areas?

Second order questions that are of interest but which cannot be answered by this study alone are: Have the existence of laws prohibiting strikes by public sector employees inhibited the effectiveness of collective bargaining organizations in achieving their goals?; Do different institutional arrangements for financing the provision of public sector services effect the outcome of public sector negotiations?; and lastly, What effects does the structural arrangement of governmental units have on the competitiveness on the labor markets for teachers? Full answers to these questions can be ascertained only after comparative studies that deal with these questions are made.

However, in designing this study, attempts have been made to provide information that would facilitate using our results to answer the last set of questions posed.

Early studies by Kasper,[1] Thornton,[2] Baird and Landon,[3] and Hall and Carrol,[4] attempted to shed light on some of the first order questions but used either such aggregated data for their variables or restricted their sample to include school districts from many states or from a very restricted area of one state that their results have to be treated with caution. Certainly their designs do not permit any of the second order questions to be addressed in their results. Only the Lipsky and Drotning study of the effects of collective bargaining on teacher salaries in New York state[5] deals with a large number of school districts within a given state having the same tax laws, state aid programs, requirements for teacher certification, etc.

Section II outlines some of the institutional factors likely to effect the demand for teachers in the Ohio labor market, including a brief description of the Ferguson Act[6] which prohibits strikes by public service employees. Section III will deal with the supply side including a brief assessment of the two major organizations advocating collective bargaining for teachers in the state - The American Federation of Teachers and The Ohio Education Association. A linear regression model "explaining" the variance in average public school teacher salaries will be presented in Section IV. Empirical results will be presented in Section V. Conclusions relating to the questions posed are offered in the last section.

II. STRUCTURE OF OHIO SCHOOLS AND DEMAND FOR TEACHERS

Ohio School Districts

Although there has been a slow steady erosion in the number of school districts in Ohio, the 624 remaining in 1971 would still allow the state to be characterized as having a highly localized educational system for its 2.2 million pupils. The size of the districts run from the one-teacher district on Middle Bass Island in Lake Erie where the teacher commutes to school on an old Ford Tri-Motor plane to the largest district--Cleveland with over 6,000 teachers and 147,000 pupils.[7] Seventeen of the districts are center city school systems in 14 Standard Metropolitan Statistical Areas (SMSA's) located wholly within the state. These SMSA's contain 302 suburban systems while the remaining 305 districts are located in smaller cities, towns and rural areas outside the extensive SMSA areas.[8]

To this relatively large number of school districts, who would serve as potential buyers of teachers' services, must be added the parochial school system of Ohio which enrolled over 350,000 children in 1970.[9] These schools, while experiencing declining enrollments, were becoming increasingly dependent on lay teachers and so must be viewed as competitors in the factor market. This type of market structure would tend to limit the price makers bargaining strength because the ability to hire teachers at less than marginal cost would be checked by losses of inputs to other buyers.[10]

The 1960's saw an increase in the number of public school teachers paralleling the growth of the public school population. There was also rapid growth of suburban districts and a decline

in the number of pupils in center city districts brought about largely by intra-SMSA migration.

Typically, teacher salaries represent 70 percent of a public school budget, while 20 percent goes to other variable cost items such as heat, light, transportation and non-professional wages. Only about 10 percent goes for capital charges.[11] Complicating the analysis is the fact that the school districts receive their funding from multiple sources under a variety of programs that sometimes place restrictions on school districts operating as buyers in the teachers' labor market. Federal revenues in the past have constituted less than 5 percent of Ohio public school expenditures.[12] In 1970, 64 percent of revenues were mostly raised on a local property tax while the remaining 31 percent came from the state.[13]

Great variability exists in terms of local district ability to raise revenues because of the tremendous range in the distribution of taxable property per pupil. The range went from less than $5,000 per pupil in the rural, Huntington local district to $161,000 in the industrial suburban Cleveland Heights in 1970.[14] Low tax value districts were able to compete for teachers only by raising the tax rate to local property owners or by receiving larger than average amounts of state aid.

State Aid Programs

Although the state aid program theoretically equalized the capacity of school districts to finance their programs the practical results yielded program expenditures that ranged in 1970 from $417 to $1568 per pupil.[15] Recent empirical investigation demonstrates that state aid may exaggerate

differences in per pupil spending.[16] Under the most recent program a school district must levy 20 mills local property tax before it can qualify for state aid. In addition, it must pay the minimum salary for teachers in various classifications so that in effect the state aid program also establishes a floor for teacher salaries throughout the state. Just as the minimum wage law has been a subject of intense lobbying efforts on the part of organized labor, the minimum salary schedule has been a major target of Ohio Education Association political efforts.

The current state aid program also contains specific aid programs such as speech and hearing, occupational therapy, extended service and special education. Not only do these programs add income to the basic subsidy, but in many instances they require hiring personnel with special qualifications or certificates and as in the case of special education require the class size to be limited to ten pupils or less. Additional subsidies are also provided for large urban school districts on the grounds that these children require more expensive educational programs.

The basic foundation program is designed to give each school that taxes itself 22.5 mills a minimum of $600 per pupil by adding state funds that would make up the difference between 22.5 times the local tax valuation per pupil. Thus, it appears that the major determinant of willingness to purchase teacher services depends on the local districts ability and willingness to tax itself.

School District Tax Laws

Ohio statutes provide that no more than 10 mills in local property tax can be levied without the consent of voters.[17] Since the foundation program requires a minimum of 20 mills to participate in the state aid program it effectively means that the tax rate a school district levies must be submitted to the local voters for their approval. The statutes also mandate that only ten mills can be levied indefinitely. Additional levies cannot run for longer than ten years so that the voters not only must approve tax rates over ten mills but renew them periodically.[18]

Thus, the local school board and administrators, who make the buy decisions in the teachers' labor market, are in effect closely monitored by the local taxpayers of the district. The voting public can register its approval or disapproval of decisions imposing added costs fairly rapidly through this particular set of institution arrangements with consequences we shall examine in greater detail in Section V.

Unless there are substantial changes in federal aid to education, a responsibility disavowed by the current administration,[19] and unless there are major changes in the amount of revenue supplied by the state we can state that the demand for teachers is going to be highly sensitive to the local elasticity of demand for public education. The existence of minimum salary scale means that districts cannot hire at below scale rates but some districts may keep their wage bill down by hiring teachers with minimum qualifications and not encouraging experienced (i.e., higher salary scale) teachers to stay in the

system. However, the existence of salary levels higher than the state minimums and the relatively large number of relatively autonomous districts is evidence that the degree of monopsony power is low for Ohio school districts.

III. TEACHERS AND COLLECTIVE BARGAINING

An excess supply of teachers relative to the demand for their services has contributed toward the rise in teacher militancy during the past few years. During the periods teacher shortage the Ohio State Department of Education generally acceeded to pressure from school superintendents unable to fill their ranks with certifiable teachers by granting cadet certificates to those that did not meet regular certification standards. Since 1964,[20] the number of public school teachers has been heavily influenced by both the certification laws which control entry into the progression and rapid increase in the level of state support for higher education. This expansion resulted in a steady rise in the number of teachers being certified in the late sixties until reports occurred that sizeable numbers of 1970 graduates in education were unable to obtain teaching positions.[21]

Collective bargaining for public workers in Ohio is not legally recognized except for the right of check off.[22] However, the right of public employees to strike is forbidden by the Ferguson Act which was passed in 1947. Under this law an employee notified by his supervisor that he is in violation of the law is considered to have "abandoned and terminated his employment." Reinstatement can occur only if the employee agrees to the following conditions: 1) His income shall remain

the same as at the time before the strike occurred; 2) No adjustments in income will be made for one year; and 3) The individual will serve a probationary period for two years without tenure.

Ohio, like other states, experienced an upsurge in attempts by both the AFT and OEA affiliates to engage in collective bargaining in the past ten years. After successful efforts by the AFT in organizing many urban communities in the nation and winning a decisive victory in New York City in 1962, the NEA, OEA and other state affiliates of the NEA began to actively engage in "professional negotiations." The National Education Association dropped its negative philosophy toward collective bargaining at it's 1964 convention,[23] and adopted an increasingly militant position toward collective bargaining including envoking "extreme sanctions." From 1962-1972 eighty strikes occurred in Ohio School Districts. Sixty-eight of them were called by OEA affiliates.[24] The overwhelming reason given for work stoppages was conflicts over salary. It was this competition between the two groups that led us to attempt to test not only the effects of collective bargaining on Ohio school teacher salaries but to see if there were differences in results of OEA and AFT bargaining.

We found, however, that only six of the fifty-six AFT locals in Ohio are the bargaining agents for a school district.[25] Included in that number were parochial schools, college and state school locals. Consequently, the small number of public school districts in which the AFT was the bargaining agent made it

impossible to test a difference between AFT and OEA hypotheses. Despite the assertion of Lipsky and Dratning that the object of collective bargaining units is the salary scale, a decision was made to develop our model in terms of testing the effects of collective bargaining in a linear regression model using average salary as the pertinent dependent variable because districts would be interested in the wage bill.

IV. THE MODEL AND DATA SOURCES

Theory

Our model to test the effects of collective organization on Ohio teacher average salaries is posited in the form:

$$AVGS = \alpha + \beta_1 \underline{AGI} + \beta_2 \underline{TVPP} + \beta_3 \underline{STM} + \beta_4 \underline{ADM} + \beta_5 \underline{OD} + \beta_6 \underline{AGRE} + \beta_7 \underline{PTR} + e \qquad [I]$$

where AVGS = Average Salary

AGI = Adjusted Gross Income Per Pupil (1966)

TVPP = Property Tax Valuation Per Pupil

STM = Local School Tax Millage

ADM = Average Daily Membership (attendance)

OD = Organized District Bivariate Variable

AGRE = Existence of a Written Contract Bivariate Variable

PTR = Pupil Teacher Ratio

Alpha, Beta and Epsilon, respectively, represent the constant term, slope coefficients and the error term found in the conventional linear regression models.

The first two independent variables may be viewed as measuring the financial well being of the school district from the perspective of the voter and in terms of the available

tax base. While it has been commonly assumed in the literature that these two are closely linked, an examination of the Correlation Matrix in Table 2 for our sample data shows otherwise. AGI measures adjusted gross income as defined on line 18 of the Internal Revenue Service Personal Income Tax form aggregated to include all returns filed in the district divided by school attendance.[26] This variable might be viewed as a measure of voters' ability to pay and an index of their taste for expenditures on education. In addition, AGI probably represents regional factor price differences. We used AGI measured for 1966 in our cross section model because 1970 census data by school district was not available at the time we made our initial runs. Subsequent tests established the high degree of association between AGI and the 1970 census income estimates (r=.93). Our preliminary assessment of this variable also determined that a very large percent of the variance that occurred in this variable was within county groupings of districts rather than between counties.

This means that local differences in AGI within a county reflect income segregation of voters and not just regional cost differences while TVPP differences represent varying percentages of industrial and commercial property in a district's tax base. In Ohio it is possible to have relatively high income levels for the voters and low amounts of tax base in a district so that the term rich, or poor must specify either the voters or the tax base for purposes of clarity. The existence of a rich tax base makes it easier for a district to achieve its program needs with a given tax millage.

STM is a measure of the voters willingness to tax the base available in the district. Size of the school district, as measured by ADM, would tend to be associated with the degree of urbanization in the area where the school district was located. Higher salaries were posited for higher ADM districts on the grounds that more higher paying positions associated with special education would occur in the larger districts. Such larger districts in urban areas might also be viewed as undesirable by teachers who might view the loss of professional autonomy in the more complex districts and perhaps the presence of social tensions as requiring higher pay to attract their services.

OD was a dummy variable assigned a value of one if the district had a teacher organization advocating collective bargaining and zero if it did not. Since many districts had such organizations, but had not achieved a written contract, we introduced another dummy variable AGRE which indicates the existence of a written contract between teachers and the administration if coded one and zero for no agreement. We expected that the presence of an organization advocating collective bargaining might induce the administration to grant higher salaries in the hopes of allaying pressures to collectively bargain.

Since Hall and Carrol indicated that they had found evidence to indicate some trade off between salary levels and class size[27] we include PTR in our model expecting that larger ratios would be positively associated with higher average salaries. Other variables were considered but were rejected on

grounds that empirical data were not available to measure them or because they introduced obvious two-way causality into the model. An example of the first type variable was labeled the demonstration effect which hypothesized that successful wage negotiations by one organization in a county might spur other nearby districts to pay higher salaries to increase their efforts. We had no means of dating contracts and were not certain that the county was a meaningful geographic context and so abandoned this variable. A more promising variable was a measure of fringe benefits. Data on this subject, however, is reported in such a confusing manner we were not able to construct an index of their economic value for the individual districts to include in this analysis.

An example of the second type problem is a measure of the level of training via a Master Degree/Baccalaurate Degree ratio. This variable was initially appealing but was rejected on grounds that higher than average salaries may have attracted higher credentialed teachers into the district, thus introducting two-way causality into the model.

The model posited in its final form expected positive regression coefficients for all independent variables so that higher salaries were expected in high income, high property value, high tax districts that had an organization pressing for collective bargaining. The existence of a collective bargaining agreement and large class size were also expected to account for higher salaries.

The Data

Our sample contained 225 out of the 624 Ohio School Districts for 1970-71 school year. All data in our sample is for 1971

except AGI which was calculated off an Internal Revenue Service tape file of 1966 personal income. The organization (OD) and agreement (AGRE) dummies were obtained of a mail questionnaire that followed up the initial mailing by polling the non-responding school districts. The 225 usable responses produced a very representative sample which was distributed between SMSA center city, suburban and exurban (none SMSA) districts in proposition to their distribution in the state.

Table One gives the two-way tabulation of the sample between urban and organizational characteristics in the sample indicating that 57% of the districts had some form of organization. What was surprising was that 60% of the center cities in the sample were not organized while a majority of both suburban and exurban respondents were organized. The largest group of our school districts were located in the suburbs of Ohio's 14 Standard Metropolitan Statistical Areas.

All other data was drawn from our Financing Education Group tape files. The interrelations between the variables are given in the correlation matrix in Table 2.

Table 1
Cross Tabulation of Organized
and Unorganized Ohio School Districts
by Urban Characteristics

Count Row % Col % Tot %	No Organization	Organization	Row Total
Center City	3 60.0 3.1 1.3	2 40.0 1.6 .9	5 2.2
Suburban	52 40.6 54.2 23.1	76 59.4 58.9 33.8	128 56.9
Exurban	41 44.6 42.7 18.2	51 55.4 39.5 22.7	92 40.9
Col Tot.	96 42.7	129 57.3	

Source: Mailed Questionnaire by Charles Blake, WSU 1972.

TABLE 2

Correlation Matrix of Ohio Public School Variables in the 225 District Sample (1971)

	AGI*	TVPP	STM	ADM	AGRE	OD	PTR	AVGS
AGI	1.00	.35	.17	.28	.14	.17	-.22	.55
TVPP		1.00	-.32	.06	.07	.12	-.46	.43
STM			1.00	.16	.07	.04	-.03	.24
ADM				1.00	.03	-.02	.003	.33
AGRE					1.00	.31	-.07	.16
OD						1.00	-.08	.07
PTR							1.00	-.25
AVGS								1.00

*AGI was available for 1966 only.

V. EMPIRICAL RESULTS

We ran two versions of the model because of the suspected differences between urban and rural school districts. In the first we included all the variables in an OLS regression with the following resul

$$AVGS = \underset{}{5285} + \underset{(.013)*}{.069AGI} + \underset{(.007)*}{.045TVPP} + \underset{(.081)*}{.4045STM} + \underset{(.010)*}{.032ADM} + \quad [II]$$

$$\underset{(154.81)**}{232.89AGRE} - \underset{(100.84)***}{111.220D} + \underset{(19.75)}{6.14PTR}$$

$R^2 = .47$

*Significant at .01
**Significant at .05 (Standard Errors)
***Significant at .15

Average salaries went up almost seven cents for every dollar increase in AGI and over four cents for every additional dollar of TVPP in a school district. A forty cent increase for each mill of school tax along with the foregoing demonstrated that the financial condition of the voters, the district tax base and voter willingness to tax themselves are the major explainers of the variability in average salaries. Adding small but significant amounts of explanatory power was the size of the district.

While the existence of an agreement was responsible for $232 in average salary variance the existence of a collective bargaining organization was associated with a negative coefficient. The

OD variable did not enter the equation at a high level of significance but there was less than 15% chance that its' coefficient did not estimate the value for the population parameter. Our AGRE coefficient was similar in sign and size to Holland and Carrol's variables denoting the existence of a collective bargaining agreement.[28] We would accordingly conclude that collective bargaining units that have won a contract have succeeded in winning salaries above the mean but that the mere existence of an organization advocating collective bargaining did not explain higher salaries. Indeed, the unexpected sign on OD plus the slight degree of collinearity between it and AGRE introduces the possibility that two-way causality exists.

Low average salaries may have caused teachers in the district to organize in an attempt to remedy their plight. PTR was not significant indicating that the pupil-teacher ratio, in association with the variables delineated in our model, was not different than zero in terms of its effects. The relatively low amount of explained variance (R^2 = .47) in this model stemmed from the lack of homegenity in the school districts included in the statewide sample. In attempting to determine if our model would be more appropriate for explaining the behavior of salaries in urban area school districts we reduced the size of our sample to include only the 133 SMSA districts. These included 5 center city and 128 suburban districts noted in Table 1 as being located

in a county in one of Ohio's fourteen SMSA's. Table 3 gives the simple correlation coefficients for the urban sample.

Our regression equation was estimated as follows:

$$\text{Urban } \underline{AVGS} = 5614 + \underset{(.016)*}{.068\underline{AGI}} + \underset{(.007)*}{.043\underline{TVPP}} + \underset{(.1109)*}{.4136\underline{STM}} + \underset{(.011)*}{.025\underline{ADM}} - \underset{(140.00)**}{224.480\underline{D}} + \underset{(210.11)}{196.26\underline{AGRE}} \qquad [III]$$

$R^2 = .45$

*Significant at .01
**Significant at .05

When this estimate is compared with our complete sample estimate we find that the intercept value for urban districts is higher but that the slope coefficients for AGI, TVPP, STM, and ADM remain similar in magnitude. However, the existence of an organization dummy enters the regression equation before AGRE and takes on a relatively smaller standard error. The existence of an agreement becomes statistically insignificant from zero indicating that the multicollinearity present has caused the estimate to become unstable for the urban sample. In addition, the lower R^2 demonstrates that our hypothesis of SMSA districts being a more homogeneous group with regard to salary variance is false. Increased significance and the larger slope coefficient for OD reinforces the idea that the direction of causality may be that low salaries are a major reason the existence of collective bargaining organizations occur in those districts.

In response to our first order set of questions posed in the introduction, we may answer that union agreements appear to have won small gains at best after allowing for the financial

TABLE 3

Correlation Matrix of Ohio Urban Public School Variables
(n = 133)

	AGI	TVPP	STM	ADM	OD	AGRE	PTR	AVGS
AGI	1.00	.368	-.017	.190	.243	.189	-.185	.513
TVPP		1.00	-.446	.028	.157	.084	-.469	.456
STM			1.00	.060	.048	.142	.075	.082
ADM				1.00	-.040	.047	.079	.257
OD					1.00	.310	-.088	.067
AGRE						1.00	-.010	.181
PTR							1.00	-.237
AVGS								1.00

condition of the school district. AFT efforts have been limited to encompass such a small number of districts that their bargaining results could not be treated for statistical significance or compared with the OEA efforts. PTR did not meet the criterion level to enter the stepwise regression program. The relatively high degree of negative association that this variable has with TVPP, as seen in Table 3, indicates that higher pupil-teacher ratios may be related to problems of an adequate tax base in the district. This examination of the urban sample indicates that organizational activity had not produced larger economic gains in urbanized areas than in the state as a whole.

VI. STRIKES, SHUTDOWNS, AND SHORT DAYS

Explanations about relative lack of success of collective bargaining to raise salaries in Ohio may be attributed to a number of causes. Among them we might cite: The abundance of teachers available in the market during the period of the cross-section analysis; The lack of power on the part of the OEA and AFT to enforce their demands because of their being denied the legal right to strike; and/or the existence of a more price elastic demand for education than has heretofore been suspected.

Younger teachers starting at lower steps of the salary scale, hired to replace departed, older and more experienced teachers might be one method of lowering the wage bill if teacher turnover were high even though an agreement had been signed. Over time, organizations would tend to bargain hardest for those steps on the salary schedule that were of the most interest to their membership. Such tactics could only hinder the effects of

collective bargaining so long as the supply of young, unorganized teachers exists. However, this group is reputably the most easily organized.

As noted in Section III above, the existence of the Ferguson Act has not prevented strikes from occurring. Early school strikes such as the four that occurred before 1967 were of short duration lasting less than four days. After that period, both the frequency of strikes and their duration rose. 1969 and 1970 were the peak years of strike activity when 49 strikes were called with three of them lasting eight days. In contrast, only nine strikes occurred in 1971 and 1972.

As can be seen in Table 4, multiple strikes have occurred in six districts. Youngstown, the scene of the most bitter conflict in the state, has had four strikes. It is the city and suburban school districts, having more strikes relative to the number of districts that projects the image of urban teacher militancy.

The vast majority (45) of Ohio School strikes were reported called over salary disputes. Interestingly the reason given for strikes in nine instances was the failure of the district to pass tax issues in elections. Teaching conditions were cited as the cause of the strike in only two instances.

Evidence of teacher militancy can be matched with indications that the voters in many school districts of the state did not have a price inelastic demand for public education with regards to local property taxes. In many instances where the district was struck more than once, it was because voters had failed to pass additional operating levies after being granted

TABLE 4

Classification of Strikes By Urbanization and Frequency

	COUNT ROW PCT COL PCT TOT PCT	CENTER CITY	SUBURBAN	EXURBAN	ROW TOTAL
Number of Strikes	0.0	9 1.6 52.9 1.4	262 47.1 86.2 41.7	285 51.3 92.8 45.4	556 88.5
	1.00	6 9.1 35.3 1.0	40 60.6 13.2 6.4	20 30.3 6.5 3.2	66 10.5
	2.00	1 20.0 5.9 0.2	2 40.0 0.7 0.3	2 40.0 0.7 0.3	5 0.8
	4.00	1 100.0 5.9 0.2	0 0.0 0.0 0.0	0 0.0 0.0 0.0	1 0.2
	Column Total	17 2.7	304 48.4	307 48.9	628 100.0

Source: Ohio Education Association, "Ohio Teacher Work Stoppages" (Mineograph) Undated.

a conditional raise by the school board to settle the first strike. Additional evidence of voter hostility to higher property taxes was the closing of 25 school systems in the 1967-1971 period. Although the typical school district that closed for lack of funds was rural, two large urban school systems - Dayton and Youngstown were in this group.[29] Since the passage of a state-wide income tax and an increase in state aid to local districts there have been no shutdowns for financial reasons. A remaining sign of existing frugality in school funding was the twenty districts in the 1972-73 school year running split shift programs.[30]

It appears that collective bargaining has not had or is it likely to have success in increasing teacher salaries under the current institutional arrangements of financing a large portion of Ohio Public School expenditures off a local property tax subject to voter approval. Clearly the Ferguson Act prohibition against strikes has been a failure. Results of the Lipsky and Drotning study tend to support the failure of collective bargaining to account for larger salaries in New York. During the period of this study New York organization was conducted under the Taylor Act which recognizes collective bargaining but prohibits strikes. Only Hawaii (a single school district state), Pennslyvania and Vermont legally permit employees to strike. Certain conditions must be met however before the strike is legal. In Vermont, public employee strikes may not, "Endanger the health, safety or welfare of the public."[31]

Studies of collective bargaining effects in different states should attempt to ascertain collective bargaining has any effects and then attempt to link these to the methods used to finance the

public service and the market structure imposed by the setting of jurisdictional boundaries of the service areas. Our evidence suggests that the price elasticity of demand for education as transmitted via property tax votes is more elastic in Ohio than educators or teacher organizations would like to believe. This raises the issue of whether or not alternative methods of financing have different effects on voter perception of education costs and hence on their demand elasticities. Collective bargaining organizations may be more successful under different methods of raising school district revenues. Studies of collective bargaining effects in a state where income was the main revenue source of the schools would yield interesting results. Such assessments would permit comparisons to be made which would allow determination to the second order questions raised in the introduction. More importantly, such comparisons would allow the student of public collective bargaining to decide if he is dealing with an important new mutant of collective bargaining or the same strain in a slightly different environment.

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